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CONTRIBUTIONS FROM THE GRAY HERBARIUM OF
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A LIST OF TYPE SPECIMENS IN ELLIOTT'S HERBARIUM

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No taxonomist needs to be told that Stephen Elliott's "Sketch of the Botany of South Carolina and Georgia" is a classic in its field, and most of us know that his herbarium is preserved in the Charleston Museum. Some of us have seen it, or parts of it. But there is no published account of its present condition; prospective visitors cannot readily learn in advance whether or not it still contains the material in which they are especially interested; and had it met with any fatal accident there would have been no record of what it had included. With all this in mind, my wife and I visited Charleston in October, 1941, and, through the courtesy of the Director of the Museum, Mr. E. Milby Burton, and his staff, were enabled to go through the whole herbarium and list and photograph the surviving types. The results of our labors are here published, in the hope that they may be of use to future investigators.

The Elliott herbarium, like the Museum itself, has had its vicissitudes. I have not been able to discover at what date it came into the possession of the Museum, but notes accompanying the specimens show that it was accessible to, and consulted by, Gray, Ravenel and Stephen Olney well back into the nineteenth century. At the time of Elliott's death (1830), the Museum seems to have been in a rather quiescent state and to have

remained so until 1850. That was the time of Gibbes and his associates; in that year, the American Association for the Advancement of Science met in Charleston, with Agassiz as one of its leaders. The result was a considerable revival of local interest in natural history and in the Museum, its transfer to rooms in the library building of the College of Charleston and the appointment of an active curator, Mr. F. S. Holmes. Progress, however, was interrupted by the Civil War. During the siege of Charleston, such of the Museum exhibits as would stand that treatment were buried; the more fragile were moved into the country, where some of them were burned by Sherman's raiders. The Elliott herbarium escaped, only to fall into the hands of one of those curators who does excellent work in his own subject and is careless—and often contemptuous—of everything else.¹ When, in the last decade of the nineteenth century, F. L. Scribner and later E. D. Merrill went to look up Elliott's grasses, they found the herbarium stored casually against a damp brick wall, a prey to mould, mice and insects. According to an article in the Charleston Evening Post for March 30, 1905, sixteen portfolios were first discovered, then four more and the twenty-first finally unearthed in 1905, in a pile of waste paper about to be burned.²

Under the direction of Prof. George Hall Ashley and his successor as curator, Prof. Paul M. Rea, the whole herbarium was sent to Biltmore, then at the height of its botanical activity, to be cleaned, poisoned, generally put in order and safely stored. All this was faithfully and intelligently done by Messrs. Beadle and Boynton. They also determined all the specimens according to Small's Flora, not always very critically but for the most part helpfully, and indicated the types of such species as were maintained by Small under Elliott's original names, but no others. They were to have published an account of the herbarium and did prepare a partial manuscript catalogue, but this part of their work was never finished.

¹ There is perhaps no surer mark of the true scholar than respect for work in other disciplines than his own, unfamiliar to him. In this connection, a word of public commendation is due those librarians and faculty members of Hamilton College who, though not themselves botanists, have kept the locally important herbarium of Sartwell, acquired about 1860, to this day in as good condition as when it was received.

² Evidence as to the original number of portfolios is conflicting. Scribner, reporting on the results of his and Merrill's examination of the grasses in U. S. Dept. Agric. Div. Agrost. Circular 29 (1901), states that there were twenty-eight volumes. The writer in the Post says twenty-one.

Rea refused to ask for the return of the herbarium until he could give it proper storage. About 1908 he acquired a large safe; the herbarium was then brought back to Charleston and has since had good care. When I first saw it in 1932 it was still in the safe. It is now kept in a steel-sheathed case, originally designed for bird-skins and therefore not altogether convenient for herbarium specimens, but dust- and insect-proof. Any benefactor who might be moved to give the Museum a good steel herbarium-case for the Elliott specimens would do a service to taxonomy.

Beadle and Boynton did not alter Elliott's arrangement, said to have been alphabetical; in 1913-16, however, the Museum staff rearranged the specimens in the sequence of Small's Flora, in the process discarding Elliott's portfolios and substituting modern genus-covers. The individual specimens, however, are still in the gray paper folders of various sizes which Elliott used, pasted or stripped to the inner pages. Labels are on slips about one by two inches, often slit to permit stems to be thrust through them, and usually pasted down across the bases of the specimens. They are very neatly and legibly written and usually give data of habitat and the name of the collector, if other than Elliott.

Naturally, the herbarium shows obvious signs of past misfortune. There is a good deal of breakage and insect damage; some specimens have no labels; many others have disappeared, leaving only labels or fragments of labels to represent them; many, including all the *Juncaceae*, are missing altogether. But it is a pleasure to be able to record that most of the surviving types, though often fragmentary, are in good condition.

The list which follows aims at nothing more than a catalogue of Elliott's existing types, which, with the photographs, may serve as a useful record in case of accident to the originals. It is not wholly complete; I may have missed a few Elliott types¹ and I found myself unprepared to deal with whatever representatives there may be of the forty-odd species of Muhlenberg's Catalogue first published with descriptions by Elliott. But so far as it goes, the list should give a correct statement. Elliott's names are listed alphabetically, with the volume and page of the

¹ Scribner, in the report above cited, speaks as if he had seen some specimens which I did not find.

Sketch on which each appears and with the statement of habitat on the label—not always the same as that in the Sketch. It is, of course, to be understood that in the case of names not in the list, no type material was found; and it will be at once apparent that missing types are mostly in groups, like the *Compositae*, most liable to attack by insects. I attempted little in the way of critical determination, but the determinations of others, taken either from the folders or from literature when, as in the case of Hitchcock's Manual, the authors had presumably seen the type specimens, are freely given, as guides at least to the approximate position of the species. Fortunately, Elliott's descriptions are good and seem not to have been much misunderstood; and interpretations were verified through the loan of part of the herbarium to Torrey. As in my notes on Desvaux's types, I have indicated by small capitals under each species, where there are synonyms, the name which appears most likely to be nomenclaturally and taxonomically correct. Names of those making the determinations, or otherwise responsible for the taxonomic placing of species, are added in parentheses. The abbreviation "B. & B." indicates Beadle & Boynton: where the phrase "a cover marked..." is used, reference is to Elliott's original folders.

Sets of our photographs have been deposited at the Gray Herbarium, the United States National Herbarium and the New York Botanical Garden.

It may be added that the Elliott herbarium contains isotypes of three species of Rafinesque—*Aristida geniculata*, *Polanisia graveolens*, and *Spiraea obovata*. It has also isotype material of *Psoralea floribunda*, *Petalostemum decumbens*, *Crypta minima* and *Monarda aristata* of Nuttall. Elliott isotypes are to be found in the Torrey herbarium at New York and presumably in the herbaria of Muhlenberg and Schweinitz at the Philadelphia Academy.

The historical matter here used is taken mostly from a series of articles by William G. Mazyck in the Bulletin of the Charleston Museum. I am indebted to Prof. M. L. Fernald for generous aid in determining identities.

Agrostis arachnoides Ell. i. 134. A loose specimen, without label, in a cover marked "Agrostis arachnoidea" is to be taken as type. *A. ELLIOTTIANA* Schult., a name based on *A. arachnoides* Ell., not *A. arachnoidea* Poir.

Agrostis trichopodes Ell. i. 135. "Hab. Georgia in aridis. Flor. autumn. Dr. Baldwin". The number 437 on a separate slip. MUHLENBERGIA EXPANSA (Poir.) Trin. (Hitchcock).

Aira triflora Ell. i. 153. "Hab. Athens, Geor. Flor. April. Mr. Green". POA CUSPIDATA Nutt. (Hitchcock).

Ammi costatum Ell. i. 350. "Hab. in inundatis, Ogeechee. Flor. Sept. Nov." Specimen in flower only. PTLIMNIUM COSTATUM (Ell.) C. & R.

Andropogon ciliatus Ell. i. 144. "Hab. in aridis juxta Beaufort. Flor. Sept." SORGHASTRUM NUTANS (L.) Nash (Beadle & Boynton; Hitchcock).

Andropogon tetrastachyus Ell. i. 150. "Hab. in humidis juxta Charleston. Flor. Sept. Oct." *A. virginicus* L. (Hitchcock); A. VIRGINICUS var. TETRASTACHYUS (Ell.) Hack. (Fernald & Griscom).

Andropogon vaginatus Ell. i. 148. "Flor. per aut. in aridis". A. VIRGINICUS (Scribner & Merrill; Hitchcock).

Apogon humilis Ell. ii. 267. Specimen without label in cover marked "Apogon humilis" and answering to the description should be taken as type. SERINIA OPPOSITIFOLIA (Raf.) Ktze. (B. & B.)

Arenaria diffusa Ell. i. 519. "Hab. in humidis. Flor. Ma.—Jul." On another label "35. Micropetalum. See letters". A. LANUGINOSA (Michx.) Rohrb. The specimen is a single branch or stem with two flowers.

ARISTIDA GRACILIS Ell. i. 142. Specimen without label in cover marked "Aristida gracilis" and agreeing with description should be taken as type.

ARISTIDA SPICIFORMIS Ell. i. 141. "Flor. aut. mihi rara. in Pineto juxta Silk Hope, Chatham Co., Georgia".

Asclepias angustifolia Ell. i. 325. "Habitat in pinetis humidis. Flor. Maio." A. MICHAUXII Decsne. (B. & B.)

Aulaxanthus ciliatus Ell. i. 102. "Hab. in aridis. Flor. Oct." ANTHAENANTIA VILLOSA (Michx.) Beauv. (Scribn. & Merrill; Hitchcock).

Aulaxanthus rufus Ell. i. 103. Label bears no data except the name and number 523. ANTHAENANTIA RUFA (Ell.) Schultes.

BOLTONIA DIFFUSA Ell. ii. 400. A cover marked *Boltonia diffusa* contains a specimen without label, consisting of a panicle without leaves and with one or two remnants of flowers.

BRICKELLIA CORDIFOLIA Ell. ii. 290. Two feet of stem, one involucre in situ, detached portions of half-devoured leaves, and some loose achenes are all that remain to represent this new genus and species. The specimen has lost its label, but agrees, as far as it goes, with the description and is in a cover marked "Brickellia cordifolia".

Cacalia atriplicifolia var. *angulata* Ell. ii. 310. A battered specimen labelled "Cacalia Hab. St. Thomas and St. Denis. Mr. Caradeux" and in a cover marked with the varietal name no doubt represents this.

Calopogon pulchellus var. *graminifolius* Ell. ii. 499. Three loose specimens without labels in cover marked with the varietal name, no doubt represent this. They are *C. BARBATUS* (Walt.) Ames (D. S. Correll).

Calycanthus inodorus Ell. i. 576. "Hab. in humidis. Fl. Apr. Mai." *C. NANUS* (Loisel.) Small (B. & B.).

Carex castanea Ell. ii. 546. "Carex Hab. in udis, Ogeechee. Flor. Aprili". Olney added to the label (he says in attached note inadvertently) "Elliottii". *C. ELLIOTTII* Schwein. & Torr., based on *C. castanea* Ell. not Wahlenb.

CAREX GLAUDESCENS Ell. ii. 553. Type not found. For the proper application of the name, see Mackenzie in Small, Fl. se. U. S. ed. 2, 1324 and Weatherby & Griscom in RHODORA xxxvi. 40.

COLLINSONIA PUNCTATA Ell. i. 36. "Hab. in umbrosis. Flor. Sept. Oct."

Collinsonia verticillata Baldw. ex Ell. i. 36. "Hab. Milledgeville Geor. Dr. Boykin". *MICHELIELLA VERTICILLATA* (Baldw.) Briq. No specimen of *C. verticillata* var. *purpurascens* Ell. was found.

Coreopsis Oemleri Ell. ii. 435. A specimen labelled merely "found in S. Carolina by Mr. Oemler" and determined as "*C. major Oemleri* (Ell.) Britton" by B. & B. probably represents this species. *C. MAJOR* var. *OEMLERI* (Ell.) Britton (Sherff).

Cyperus mariscoides Ell. i. 67. There is a specimen so labelled, but it is from North Carolina, coll. Schweinitz. It is *C. filiculmis*.

Cyperus repens Ell. i. 69. "Hab. in cultis circa Charleston. Flor. Aug.-Oct." *C. ESCULENTUS* L. (B. & B.)

CYPERUS TETRAGONUS Ell. i. 71. Name only and number 83 on label.

DICHROMENA LATIFOLIA Baldw. ex Ell. i. 90. A specimen labelled with an unpublished name and "hab. Geor. Dr. Baldwin" agrees with the description and no doubt represents this species.

Dracocephalum obovatum Ell. ii. 86. "Hab. St. Mary's, Georg. Dr. Baldwin" and on a separate slip the number 197. *PHYSOSTEGIA obovata* (Ell.) R. K. Godfrey in herb., n. comb.

Drosera foliosa Ell. i. 376. "Hab. Chesterfield Co. So. Car. Dr. Macbride". *D. INTERMEDIA* Hayne with elongated axis, presumably from growing in water (f. *NATANS* Heuser).

Elephantopus nudicaulis Ell. ii. 481. Specimen in cover marked with this name, without label but agreeing with description, should be taken as type. *E. TOMENTOSUS* L. (B. & B.)

Erianthus contortus Ell. i. 40. There is a cover labelled *E. contortus*, but the specimen within, labelled "Erianthus brevibarbis Mich. Hab. in humidis. Flor. Sept. Oct.", does not agree with the description.

ERIANTHUS STRICTUS Baldw. ex Ell. i. 39. Specimen without label, determined as *E. strictus* by B. & B., may be taken as type.

Eryngium Plukenetii Ell. i. 582. Type not found. The figure of Plukenet cited may, of course, if identifiable, serve as type.

EUPATORIUM PINNATIFIDUM Ell. ii. 295. Specimen without leaves and without label, in cover marked "E. pinnatifidum", has been designated as type by B. & B.

EUPATORIUM SCABRIDUM Ell. ii. 299. "Flor. Oct. in sylvis subaridis. 157".

EUPHORBIA CORDIFOLIA Ell. ii. 656. Type missed by me, but seen by Fernald and reported upon by him in RHODORA xliii. 198 (1941).

EUPHORBIA PANICULATA Ell. ii. 660. "Hab. juxta Columbianam, So. Car. Flor. Aug. Sept." Three segments of stem, one cauline leaf and a branch bearing an inflorescence are all that is left of the type.

Festuca parviflora Ell. i. 170. "Hab. in pinetis Car. Flor. Apr. Mr. Bennett." F. OCTOFLORA Walt. (Hitchcock).

Fuirena hispida Ell. i. 579. "Hab. Milledgeville, Geor. Dr. Boykin." According to Fernald, RHODORA, xl. 397, *F. hispida* Ell. is the same as true *F. squarrosa* Michx.

GERARDIA FASCICULATA Ell. ii. 115. "Hab. in humidis insularum mar. Flor. Jun.-Sept."

Gerardia Plukenetii Ell. ii. 114. Pennell has designated as type a loose specimen without label in cover marked "G. Plukenetii". It agrees with Elliott's description; Pennell considers it *G. SETACEA* Walt.

Glycine mollisissima Ell. ii. 235. "Hab. St. Mary's, Geor. Dr. Baldwin". The label of what I take to be the type specimen bears no name, but the data are those given in the Sketch. *Dolicholus mollisissimus* (Ell.) Vail. RHYNCHOSIA MOLLISSIMA (Ell.) S. Wats.

GRATIOLA MEGALOCARPA Ell. i. 16. No specimen seen. The name, however, is based on *G. acuminata* sensu Pursh, not Walter, and Pennell (Mon. Phil. Acad. i. 92) has therefore typified it by a Pursh specimen, extant in the herbarium of the Philadelphia Academy.

Hypoxis filifolia Ell. i. 397. "Flor. Apr. in aridis, Ogeechee Ferry". H. JUNCEA Sm. (B. & B.)

Ipomoea orbicularis Ell. i. 257. "Hab. in arenosis maritimis, Cumberland. Flor. per aetatem. Dr. Kollock." I. PES-CAPRAE (L.) Sweet (B. & B.)

LATHYRUS PUSILLUS Ell. ii. 223. "Hab. St. John's juxta Cooper R. Flor. Mars. Dr. Trescott."

LECHEA VILLOSA Ell. i. 184. "major Mich. nec L. Flor. per aet. in pascuis aridis ubique." The type is a small specimen with a long basal branch.

Liatris Walteri Ell. ii. 285. A mixed sheet, with heads apparently of *L. scariosa* and leaves answering to Elliott's description, may partly represent this. Label: "Hab. in aridis juxta Beaufort. Flor. Sept. 323" CARPHEPHORUS TOMENTOSUS (Michx.) T. & G. (Gray) var. WALTERI (Ell.) Fernald in RHODORA xlii. 481 (1940).

LINDERNIA REFRACTA Ell. i. 579. "Hab. in sphagnis, Barnwell Co. So. Car. Flor. Aug."

Ludwigia cylindrica Ell. i. 213. "Hab. in aquosis juxta Beaufort. Flor. Aug. Sept." L. GLANDULOSA Walt. (B. & B.)

LUDWIGIA LANCEOLATA Ell. i. 213. A specimen labelled "Ludwigia Hab. in humidis. Dr. Baldwin" is indicated as type by B. & B. and agrees with the description.

LUDWIGIA NATANS Ell. i. 581. Specimen without label, in cover marked "*L. natans*" and agreeing with the description, is designated as type by B. & B.

LUDWIGIA SPHAEROCARPA Ell. i. 213. "Hab. in humidis juxta Orangeburg, So. Car. Flor. Aug."

LYCOPUS ANGUSTIFOLIUS Ell. i. 26. Fernald has suggested as type material two loose specimens in cover marked *Lycopus americanus* and with no label except that someone has written "Lycopus americanus M" "96" on the inside of the cover. These plants agree with the description.

Lycopus sinuatus Ell. i. 26. Specimen in cover marked *Lycopus sinuatus*, with a loose label reading "Lycopus europaeus? Hab. in aquosis Ogeechee. Flor. Oct. Nov." is apparently the type. The leaves, as described, are very deeply cut with long, narrow segments. L. AMERICANUS Muhl.

Lysimachia Herbemonti Ell. i. 232. "Hab. Columbia, S. Car. Mr. Herbemont." L. ASPERULIFOLIA Poir. (B. & B.)

LYTHRUM LANCEOLATUM Ell. i. 544. "Hab. in humidis. Flor. Jun. Jul."

Mariscus cylindricus Ell. i. 74. B. & B. have marked an unlabelled specimen, accompanied only by the number 351, as this species. It agrees with the description and should probably be taken as the type. *Cyperus Torreyi* Britton, based on *M. cylindricus* Ell., not *C. cylindricus* Chapm. C. RETRORSUS, var. CYLINDRICUS (Ell.) Fern. & Griseb.

Micranthemum emarginatum Ell. i. 18. "Hab. in aquosis. Flor. per aetat." M. UMBROSUM (Walt.) Blake (Pennell).

MONOTROPSIS ODORATA Ell. i. 479. "Monotropsis Schweinitz. Hab. juxta Salem, No. Car. Flor. Feb. Mar. Mr. Schweinitz."

Ophiorrhiza lanceolata Ell. i. 238. A specimen labelled "Ophiorrhiza Mitreola L. in humidis in insulis mar. praec. Chaplinn Fregi. Flor. Aug. Sept." has been indicated by someone (perhaps Ravenel) as the *O. lanceolata* of the Sketch. The leaves of this specimen, however, are not long-lanceolate. The description applies better to an unlabelled specimen mounted beside it, in which the rameal leaves are long-lanceolate. The two cauline ones left, however, are elliptic rather than lanceolate. CYNOCOTONUM MITREOLA (L.) Britton (B. & B.)

Orchis bidentata Ell. ii. 488. A specimen (flowering raceme and three reduced upper leaves) without label, but agreeing with the description, probably represents this species. "Perularia flava (L.) Farwell" (B. & B.), i. e. HABENARIA FLAVA (L.) Spreng.

OXALIS RECURVA Ell. i. 526. "Flor. Apr. Hab. in cultis et pascuis circa Charleston." The specimen has suffered much; no flowers and only a few leaves are left.

PANICUM AMARUM Ell. i. 121. Type not found. Ravenel has annotated as "Panicum amarum Ell. Sk." a specimen labelled by Elliott with an unpublished name and the data "Hab. in spissis maritimis Flor. Sept." This specimen is *P. virgatum* and was so determined by Scribner & Merrill.

PANICUM ANGUSTIFOLIUM Ell. i. 139. "Hab. in aridis. Flor. Ma?"

Panicum cenchroides Ell. i. 111. "Hab. Jekyl, Georg. Dr. Baldwin." No. 475 on separate slip. CENCHRUS MYOSUROIDES HBK. (Scribner & Merrill; Hitchcock).

PANICUM CILIATUM Ell. i. 186. "Flor. per . . . in umbrosis aridis. 480."

Panicum corrugatum Ell. i. 113. "Hab. Georgia. Dr. Baldwin." A separate slip, probably Baldwin's, reads: "511. Is this a var. of glaucum?" SETARIA CORRUGATA (Ell.) Schultes.

Panicum crusgalli var. *muticum* Ell. i. 114. "var. mutica Carol." ECHINOCHLOA CRUSGALLI var. MITIS (Pursh) Peterm. (Hitchcock).

PANICUM ENSIFOLIUM Baldw. ex Ell. i. 126. "Hab. in humidis. Georg. Dr. Baldwin."

Panicum gibbum Ell. i. 116. "Flor. Aug. Sept. Car. Georg. in locis udis." SACCIOLEPIS STRIATA (L.) Nash (Hitchcock).

PANICUM GYMNOCARPON Ell. i. 117. "Hab. in solis subhumidis juxta Savannah. Flor. Aug. Sept. Dr. Baldwin."

PANICUM HIANIS Ell. i. 118. "Hab. in pinetis humidis. Flor. Aug. Oct."

PANICUM LANUGINOSUM Ell. "Hab. Georg. Dr. Baldwin". no. 483 on separate slip.

Panicum multiflorum Ell. i. 122. "Hab. in umbrosis. Flor. Mai. June". P. POLYANTHES Schult., based on *P. multiflorum* Ell. not Poir.

PANICUM OVALE Ell. i. 123. "Hab. St. Mary's, Georg. Dr. Baldwin." No. 290.

Panicum pauciflorum Ell. i. 120. "Hab. in humidis umbrosisque. Flor. Apr. Mai." On separate slip no. 490. P. OLIGOSANTHES Schult., based on *P. pauciflorum* Ell. not R. Br.

PANICUM SCABRIUSCULUM Ell. i. 121. "Hab. Georg. Dr. Baldwin."

PANICUM SPHAEROCARPON Ell. i. 125. "Hab. Georg. Dr. Baldwin." On separate slip no. 498.

PANICUM STRIGOSUM Muhl. ex Ell. i. 126. "Hab. in humidis, Car. et Georg. Flor. Ma. Jun."

Panicum villosum Ell. i. 124. "Hab. in umbrosis. Flor. Ap. Ma." P. CONSANGUINEUM Kunth, based on *P. villosum* Ell. not Lam.

Panicum viscidum Ell. "Hab. in humidis. Flor. per aetat." P. SCOPARIUM Lam. (Scribner & Merrill; Hitchcock).

Panicum Walteri Ell. i. 115. "Hab. in humidis circa stagnum 6½ a Sav. versus Ogeechee. Flor. Mai. 478" P. HEMITOMON Schult., based on *P. Walteri* Muhl. (which is the same as *P. Walteri* Ell.), not Pursh.

Paspalum dasyphyllum Ell. i. 105. "Hab. in cultis. Flor. Aug. Oct." P. SUPINUM Bosc ex Poir. (Chase).

Paspalum vaginatum Ell. i. 109. "Hab. Georg. Dr. Baldwin." On a separate slip "membranaceum 477". P. DISSECTUM L. (Chase).

PENTSTEMON DISSECTUM Ell. ii. 129. "Hab. Louisville, Georgia. Mr. Jackson."

Phlox cordata Ell. i. 244. A specimen without label, determined as *P. MACULATA* L. by B. & B. and by Wherry and in a cover marked with a manuscript name, very likely represents this species. It agrees with the description.

Poa ambigua Ell. i. 165. "Hab. in mont. Carolinae. Flor. autumn. Dr. Macbride." TRIODIA LANGLOISII (Nash) Bush. *P. ambigua* Ell., not *T. ambigua* R. Br. (Hitchcock).

Poa conferta Ell. i. 158. "Hab. juxta Columbianam. Mr. Herbermont. 518". Elliott's name is, however, a substitute for *P. glomerata* Walt., given under the mistaken impression that there was a *P. glomerata* L. ERAGROSTIS GLOMERATA (Walt.) L. H. Dewey (Scribner & Merrill; Hitchcock).

Poa nitida Ell. i. 162. "Hab. in cultis, Paris Island. Flor. per aetatem." ERAGROSTIS ELLIOTTII S. Wats., based on *P. nitida* Ell. not Lam.

Poa tenuis Ell. i. 156. "Hab. Greenville Co., So. Car. Flor. aut. Mr. Moulins." ERAGROSTIS CAPILLARIS (L.) Nees (Scribner & Merrill; Hitchcock).

POLYGALA RAMOSA Ell. ii. 186. A specimen without label and in a cover marked only "Polygala", but agreeing with the description, has been designated as type by B. & B.

Polygonum fimbriatum Ell. i. 583. "Hab. in aridis inter amnes Flint et Chatahoochie, Geor. Flor. Aug. Sept." THYSANELLA FIMBRIATA (Ell.) A. Gray.

POLYGONUM PUNCTATUM Ell. i. 455. There is much confusion and probable transposition of labels among the specimens here. That labelled "Polygonum barbatum Muhl. punctatum mihi" is *P. hydropiperoides* Michx. and, of course, does not agree with Elliott's description of *P. punctatum*. The specimen labelled "Polygonum Hydropiperoides—Mite Persoon" (the latter Elliott's name for *P. hydropiperoides* Michx.) is *P. setaceum* Baldw. The only specimen of *P. punctatum* as usually interpreted is labelled "P. var. Hydropiper".

Under these circumstances it seems best to be guided by Elliott's description and synonymy, to treat *P. punctatum* as a substitute name for *P. Hydropiper* sensu Michx. not L. and to continue to apply it in the now current sense, as synonymous with (and earlier than) *P. acre* HBK.

POLYGONUM SETACEUM Baldw. ex Ell. As above noted, there is no specimen so labelled. Here also it seems best to be guided by Elliott's description and the fact that there is a specimen of *P. setaceum* which he had seen, and continue to apply the name in its current sense.

PRUNUS UMBELLATA Ell. i. 541. A specimen labelled "Prunus Hab. in aridis umbrosis. Flor. Mart." agrees with the description and may be taken as type. It is in a cover marked "Prunus pennsylvanica?"

Psoralea eglandulosa Ell. ii. 198. A specimen with one slip reading "Ps. eglandulosa" and another "Milledgeville. Dr. Boykin", in a cover marked "Psoralea eglandulosa". *P. pedunculata* (Mill.) Vail (B. & B.); *P. PSORALIOIDES* (Walt.) Cory var. EGLANDULOSA (Ell.) F. E. Freeman in RHODORA xxxix. 426 (1937).

Psoralea multijuga Ell. ii. 198. "Hab. Abbeville, So. Car. Mr. Gourdine." The label gives a manuscript name, but the specimen agrees with the description and has been designated as type by B. & B. It is accompanied by a note by Miss Vail stating that it was examined by Britton and Small in 1894 and determined as *Astragalus glaber* Michx. This determination, though adhered to by Small in both editions of his Flora and in his Manual, is disputed by Boynton in another note on the folder. He, however, does not say what the specimen is. In habit and foliage, it does resemble *A. glaber*, but the inflorescence appears quite different. I did not recognize it; it should have further investigation.

Ranunculus oblongifolius Ell. ii. 58. "Hab. in humidis. Flor. Mai." no. 588. R. PUSILLUS Pursh (Fernald).

Ranunculus palmatus Ell. ii. 61. "Hab. St. John's, Santee. Flor. Mai. Dr. Macbride." no. 590. *R. HISPIDUS* Michx. (with appressed pubescence) (Fernald).

Ranunculus trachysperma Ell. ii. 65. "Hab. St. John's, Santee. Flor. Maio. Dr. Macbride." no. 591. *R. PARVIFLORUS* L. (B. & B.)

Rhexia angustifolia Ell. i. 438. "Hab. in udis juxta Savannah. Flor. Jun. Jul." The specimen is labelled *R. LANCEOLATA* Walt.; Elliott's name appears to be no more than an illegitimate substitute for Walter's.

RHYNCHOSPORA CADUCA Ell. i. 62. "Hab. in udis juxta Charleston. Flor. per aetatem."

RHYNCHOSPORA PLUMOSA Ell. i. 58. "Hab. in pratis aridis, Geor. Car. Flor. Mai. Jul."

SABBATIA BRACHIATA Ell. i. 284. "Hab. in Car. et Geor. superiore. Mr. Herbemont. Dr. Boykin."

Sabbatia corymbosa Baldw. ex Ell. i. 283. "Hab. in pinetis humidis. Flor. Jul. Aug." On separate slip no. 332. *S. DIFORMIS* (L.) Druce.

SABBATIA GENTIANOIDES Ell. i. 286. "Hab. in humidis, Bull. Co., Georg. Flor. Aug. Mr. Abbot."

Salsola linearis Ell. i. 332. "Flor. July-Sept. in scirpetis maritimis." *SUAEDA LINEARIS* (Ell.) Moq.

Salvia Claytoni Ell. i. 32. A specimen labelled "Salvia Verbenaca [the epithet later than the rest of the label] hab. pascuis aridis, Beaufort" probably represents this, though the leaves are scarcely cordate. *S. VERBENACA* L. (B. & B.); Elliott himself doubted if his plant was distinct from it.

× *SARRACENIA CATESBAEI* Ell. ii. 11. "Hab. Chesterfield Co., So. Car. Dr. Macbride" and at top of label "Catesby 69 b". *S. flava* × *purpurea* (J. M. MacFarlane).

Scirpus ciliatifolius Ell. "Hab. in humidis. Flor. Sept. Oct." *BULBOSTYLIS CILIATIFOLIUS* (Ell.) Fernald.

Scirpus coarctatus Ell. i. 83. "Flor. aut. in aridis Beaufort." *BULBOSTYLIS COARCTATUS* (Ell.) Fernald.

SCIRPUS DIVARICATUS Ell. i. 88. "In humidis pinetis. Flor. Jun." No. 272.

Scirpus equisetoides Ell. i. 79. "Hab. St. Stephen's, So. Car. et juxta Fayetteville, No. Car. Flor. Apr. Mai. Mr. Schweinitz." *ELEOCHARIS EQUISETOIDES* (Ell.) Torr.

Scirpus schoenoides Ell. i. 89. "Hab. Georgia. Dr. Baldwin." No. 408. *RHYNCHOSPORA SCHOENOIDES* (Ell.) Britton.

Scirpus simplex Ell. i. 76. "Hab. Ogeechee in udis". On separate slip no. 475. *ELEOCHARIS TUBERCULOSA* (Michx.) R. & S. (Svenson).

Scirpus stenophyllus Ell. i. 83. "Flor. per aet. in aridis." *BULBOSTYLIS STENOPHYLLUS* (Ell.) Fern.

Scirpus sulcatus Ell. i. 86. "Hab. in humidis. Flor. Sept."
FIMBRISTYLIS DIPHYLLA (Retz.) Vahl. *F. laxa* Vahl (B. & B.)

SCLERIA GRACILIS Ell. ii. 557. "Hab. St. Mary's, Geor. Dr. Baldwin." The label does not bear the specific epithet, but habitat-data and description agree and it is designated as type by B. & B.

Scleria hirtella var. *strigosa* Ell. ii. 560. "Hab. Florida. Flor. Maio. Dr. Baldwin." Also another label, presumably Baldwin's, reading: "10. Scleria Is this one described by Mich.?" S. CILIATA Michx. (B. & B.)

Sesuvium pentandrum Ell. "Hab. in salis juxta Charleston. Flor. per aetat." A second cover, marked "Sesuvium pentandrum", but without label, contains better material than that accompanying the label. S. MARITIMUM (Walt.) BSP.

Sida gracilis Ell. ii. 159. "In aridis juxta Beaufort. Flor. Sept." The stem is minutely puberulent with branched hairs, not glabrous, as described. SIDA ELLIOTTII T. & G., based on *S. gracilis* Ell. not Rich.

Silene fimbriata Baldw. ex Ell. i. 515. The type has no Elliott label, but one, probably of Baldwin, reading: "Silene fimbriata. Crawford Co." S. BALDWINII Nutt. (B. & B.)

Sisymbrium Walteri Ell. ii. 146. "Sisymbrium tanacetifolium Walt. Hab. in humidis. Flor. Maio." RORIPPA WALTERI (Ell.) Mohr.

Sium tricuspidatum Ell. i. 354. "Hab. in humidis. Flor. per aetat." The specimen is almost wholly consumed by insects; only stems and fragments of leaves remain. OXYPOLIS RIGIDIOR (L.) Raf. (B. & B.)

Solanum nigrum L. var. *virginicum* Ell. i. 281. "In cult. et pascuis ubique." The leaves in the specimen accompanying Elliott's label are not repand; it has been determined by B. & B. as *S. nigrum*. Elliott's name is not based on *S. virginianum* L., which is treated as a separate species on the same page of the Sketch.

Solidago angustifolia Ell. ii. 388. No type was found at Charleston. There is, however, a fragment in the Gray Herbarium with a Torrey & Gray label reading, "S. angustifolia Ell. ! ramus ex herb. ips." This is very likely a duplicate given to Torrey when he borrowed Elliott's material and shared by him with Gray. S. PETIOLATA Mill. (Fernald).

Tillandsia Bartramii Ell. i. 379. "Hab. Mortar Swamp, Liberty Co., Georg. Mr. Le Conte." T. TENUIFOLIA L. (L. B. Smith).

TRILLIUM CATESBAEI Ell. i. 429. "Hab. Car. et Geor. sup. Mesrs. Brown & Perry"

TRILLIUM NERVOSUM Ell. i. 429. "Hab. Car. sup. Mr. Greene."

VICIA ACUTIFOLIA Ell. ii. 225. A specimen labelled "Vicia Flor. Apr. Scriven Co. Georgia" and named *V. acutifolia* by B. & B. is probably to be taken as type.

Villarsia cordata Ell. i. 230. "Hab. juxta Granby in rivulo dicto Savannah Hunt. Flor. Aug. Sept." NYMPHOIDES CORDATUM (Ell.) Fern.

VIOLA ESCULENTA Ell. ex Brainerd, Bull. Torr. Bot. Club xxxvii. 588 (1910). Label reads: "Viola esculenta mihi. Heterophylla Muhl. Fl. Apr. in udis Ogeechee etiamsi [words illegible] Pennsylv."

VIOLA TRIPARTITA Ell. i. 302. "Hab. Athens Georg. Mr. Green."

THE HYBRID OAK, × *QUERCUS RUDKINI*,
AT ARLINGTON, VIRGINIA

H. A. ALLARD

(PLATE 709)

Fifteen or twenty years ago the writer found a small oak seedling at Lyon Park, Arlington Co., Virginia, which appeared to combine some of the characteristics of two common species of oak growing in the immediate locality, namely, the Willow Oak, *Quercus phellos* L., and the Black Jack Oak, *Q. marilandica* Muench. Other members of the Red Oak group also grew here, including the Pin Oak, *Quercus palustris* Muench., the Scarlet Oak, *Q. coccinea* Muench., the Black Oak, *Q. velutina* Lam., the Red Oak, *Q. borealis* Michx. var. *maxima* (Marsh.) Ashe, and the Spanish Oak, *Q. falcata* Michx.

The shape, texture, pubescence, greenness and luster of the leaf, bud characters, and acorn characters suggested hybridity between *Q. phellos* and *Q. marilandica*, rather than between any other species of this Red Oak assemblage.

An interest in the flora of our area, and more especially in some of the supposedly hybrid oaks of the District area, led the writer to publish an account of some of these aberrant forms and to report on a study of the progeny of Saul's Oak, *Quercus saulii* Schneid., growing at Arlington, Va.

In this paper¹ drawings were presented illustrating various leaf forms produced by the supposed hybrid oak, *Q. phellos* × *mari-*

¹"A Progeny Study of the So-Called Oak Species *Quercus saulii*, With Notes on Other Probable Hybrids Found in or Near the District of Columbia," by H. A. Allard. Bull. Torr. Bot. Club 59: 207-277, 1932.

landica above referred to. At that time, the actual hybrid nature of this oak and the parents involved was a matter of pure conjecture. After an interim of nearly ten years, further corroborative evidence appears at hand establishing with even greater certainty the hybrid origin of this oak involving *phellos* and *marilandica* parentage.

Recently Dr. W. C. Coker of the University of North Carolina, visited the writer and, after an examination of this oak material, tentatively pronounced it to be similar to a hybrid oak discovered some years ago at Chapel Hill, North Carolina.

This oak was referred to in a footnote in the excellent work by Coker and Totten¹ (p. 157). It was stated in this footnote that the tree was regarded as a hybrid between *Q. phellos* and *Q. marilandica*. Many acorns were then planted in their propagating gardens from this aberrant tree, and a progeny of about 75 trees was secured. These immediate descendants showed great variation in all morphological characters and also in growth habit. The leaves of some of these trees almost duplicated the *phellos* parent, while others closely duplicated the *marilandica* parent, substantiating their previous surmise as to the species involved in its hybridity. Other trees in this progeny showed various intermediates in form of leaf. A number of the trees were poor and stunted due probably to some semilethal combination of factors, while others were vigorous and striking in appearance due to more favorable combinations.

This study of the actual descendants of the oak tree found at Chapel Hill, and comparisons of this material with that at Arlington, Virginia, show that the similarity of their characteristics is so close that there seems to be no other logical alternative than to pronounce the latter definitely a hybrid of *Q. phellos* and *Q. marilandica*.

The opinion is held by some specialists that most of the so-called hybrids of the District area appear to be merely aberrant forms of our well recognized species, the only exception, perhaps, being *Quercus saulii*.

In view of the more recent evidence of its hybrid nature, the Arlington oak cannot well be regarded as a simple variant of

¹ "Trees of the Southeastern States," by William Chambers Coker and Henry Roland Totten, University of North Carolina Press, Chapel Hill, N. C., 2nd Ed., 1937.

either *Q. phellos* or *Q. marilandica*. If this view is held unconditionally, then its various intermediate characteristics and its progeny make it a variant of both, and *Q. phellos* and *Q. marilandica* then become extremes of one species-assemblage, a concept which most botanists would not subscribe to.

This hybrid oak appears to have been first described by N. L. Britton¹ in 1882 and named by him *Quercus Rudkini*. Later C. S. Sargent² illustrated a supposed cross of *Q. phellos* and *Q. marilandica*.

It may be stated that the illustrations both of Britton and of Sargent agree closely with the Arlington and the Chapel Hill material.

There is also some question as to whether it is entirely correct to regard the Bartram Oak, *Quercus heterophylla* Michx. f., as a mere variant of *Q. phellos* or of some other member of the Red Oak group.

It should be remembered in this connection that D. T. MacDougal³ in 1907 obtained 55 seedlings of a Bartram form of oak, which gave extremes of leaf form extending from *Q. phellos* to *Q. maxima*. From this MacDougal reasonably concluded that Bartram's oak is an indubitable hybrid which has naturally arisen between *Q. phellos* and *Q. maxima*. It is doubtful if any stretch of the imagination will, in this instance, lead one to conclude that this assortment shows merely the variations to be expected in either *Q. phellos* or in *Q. maxima*. Why, furthermore, should we regard MacDougal's experimental work as invalid evidence in this matter?

If our oaks hybridize, as undoubtedly they sometimes do, there is perhaps a very remote probability that the first cross or any particular derivative of such cross will survive. While it is established experimentally that in the case of *Quercus heterophylla* MacDougal's Bartram form was of *phellos* × *maxima* parentage, there is still some question as to its actual identity with the original material which the younger Michaux described and named in 1810. However, if the Michaux type is identical in origin and character with MacDougal's tree and the District

¹ "On a Hybrid Oak Near Keyport, N. J.", Bull. Torr. Bot. Club 9: 13-15. pl. 10-12. 1882.

² "The Silva of North America", by C. S. Sargent, 8: pl. 437. 1895.

³ "Hybridization of Wild Plants", by D. T. MacDougal, Bot. Gaz. 43: 45-58, 1907.